Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	5	wo-200016810-$.did. or wo-2002032421-$.did. or "6733744".pn. or wo-9847538-$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/09/01 11:02
L2	7	wo-200016810-$.did. or wo-2002032421-$.did. or "6733744".pn. or wo-9847538-$.did. or wo-9852609-$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/09/01 11:02
S2	2	"20040022731".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/09/01 11:01
S3	2	"20040028611".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 17:12
S4	596	tricarbocyanin$	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 17:12
S5	571	S4 and dye	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 17:12
S6	216	S5 and fluorescent	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 17:12
S7	515	S4 same dye	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 17:12
S8	186	S7 and fluorescent	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 17:21
S9	2	"6086737".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 17:29

S10	2	wo-9852609-$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 19:31
S11	103	S4 and succinim$	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 18:15
S12	103	S5 and succinim$	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 18:50
S13	2	"5242680".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 19:01
S14	2	"6306628".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 19:14
S15	5	"3337583".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/08/31 19:14
S16	2	"3337583".pn.	USPAT; USOCR	AND	ON	2005/08/31 19:14
S17	1	wo-200016810-$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	AND	ON	2005/09/01 11:01
S18	1	2000-317296.NRAN.	DERWENT	AND	ON	2005/08/31 19:32

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> d his ful

        (FILE 'HOME' ENTERED AT 10:44:22 ON 01 SEP 2005)

        FILE 'REGISTRY' ENTERED AT 10:44:26 ON 01 SEP 2005
L1               STRUCTURE UPLOADED
L2               STRUCTURE UPLOADED
L3               STRUCTURE UPLOADED
L4               STRUCTURE UPLOADED
L5               STRUCTURE UPLOADED
L6               STRUCTURE UPLOADED
L7             · STRUCTURE UPLOADED
L8        110 SEA SSS FUL L4
L9         40 SEA SUB=L8 SSS FUL L3
L10         0 SEA SUB=L9 SSS FUL L6
L11         6 SEA SUB=L8 SSS FUL L1
L12         0 SEA SUB=L11 SSS FUL L6

        FILE 'HCAPLUS' ENTERED AT 10:49:19 ON 01 SEP 2005
L13         8 SEA PLU=ON  L9
L14         8 SEA PLU=ON  L11
L15         1 SEA PLU=ON  L13 AND L14
L16        15 SEA PLU=ON  L13 OR L14
L17        14 SEA PLU=ON  L16 AND (PD<20030129 OR PRD<20030129)
L18        13 SEA PLU=ON  L16 AND (PD<20030124 OR PRD<20030124)
              D L18 1-13 IBIB HITSTR

        FILE 'MARPAT' ENTERED AT 10:53:26 ON 01 SEP 2005
L*** DEL    0 DHIS
L19         0 SEA SSS SAM L1
L20        10 SEA SSS FUL L1
              D L20 1-10 IBIB IDE


        FILE HOME

        FILE REGISTRY
        Property values tagged with IC are from the ZIC/VINITI data file
        provided by InfoChem.

        STRUCTURE FILE UPDATES:   31 AUG 2005  HIGHEST RN 862246-83-1
        DICTIONARY FILE UPDATES:  31 AUG 2005  HIGHEST RN 862246-83-1

        New CAS Information Use Policies, enter HELP USAGETERMS for details.

        TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

          Please note that search-term pricing does apply when
          conducting SmartSELECT searches.

        *****************************************************************
        *                                                               *
        * The CA roles and document type information have been removed from *
        * the IDE default display format and the ED field has been added,  *
        * effective March 20, 2005.  A new display format, IDERL, is now   *
        * available and contains the CA role and document type information. *
        *                                                               *
        *****************************************************************

        Structure search iteration limits have been increased.  See HELP SLIMITS
        for details.

        Experimental and calculated property data are now available. For more
        information enter HELP PROP at an arrow prompt in the file or refer
```

to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

FILE HCAPLUS

FILE COVERS 1907 - 1 Sep 2005   VOL 143 ISS 10
FILE LAST UPDATED: 31 Aug 2005   (20050831/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
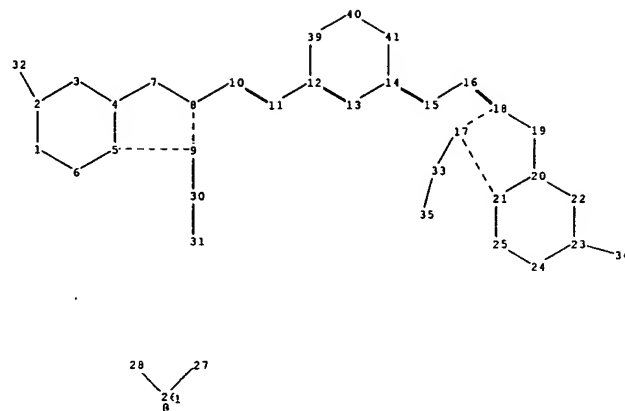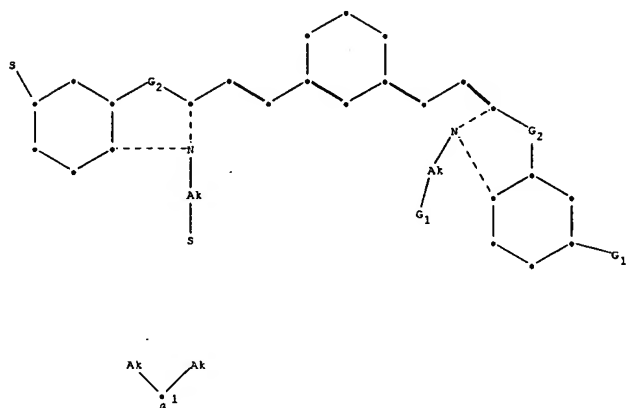 substance identification.

FILE MARPAT
FILE CONTENT: 1988-PRESENT (VOL 143 ISS 09)(20050826/ED)

MOST RECENT CITATIONS FOR PATENTS FROM FIVE MAJOR ISSUING AGENCIES
(COVERAGE TO THESE DATES IS NOT COMPLETE):

US   6903214 07 JUN 2005
DE   10350965 25 MAY 2005
EP   1538192 08 JUN 2005
JP 2005136379 26 MAY 2005
WO 2005060437 07 JUL 2005

Expanded G-group definition display now available.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

chain nodes :
    10   11   15   16   26   27   28   30   31   32   33   35   36
ring nodes :
    1   2   3   4   5   6   7   8   9   12   13   14   17   18   19   20   21   22   23   24   25
    39   40   41
chain bonds :
    2-32   8-10   9-30   10-11   11-12   14-15   15-16   16-18   17-33   23-36   26-27
    26-28   30-31   33-35
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   12-13   12-39   13-14
    14-41   17-21   17-18   18-19   19-20   20-21   20-22   21-25   22-23   23-24   24-25
    39-40   40-41
exact/norm bonds :
    1-2   1-6   2-3   2-32   3-4   4-5   4-7   5-6   5-9   7-8   8-9   8-10   9-30   10-11
    11-12   12-13   12-39   13-14   14-15   14-41   15-16   16-18   17-21   17-18   17-33
    18-19   19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27   26-28
    30-31   33-35   39-40   40-41

G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
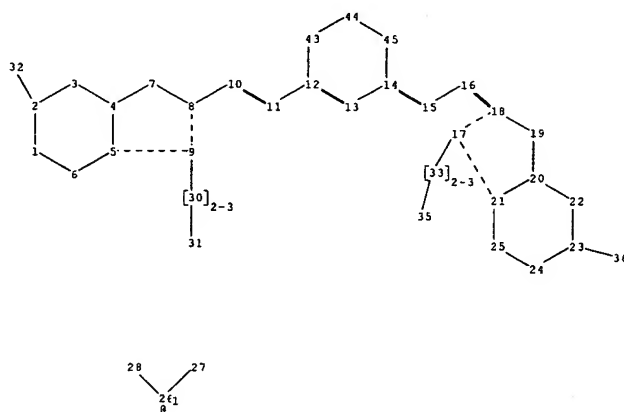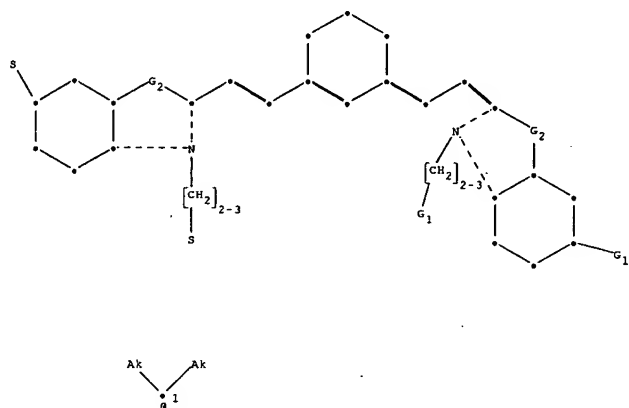   33:CLASS   35:CLASS   36:CLASS   39:Atom   40:Atom   41:Atom
Generic attributes :
    27:
    Type of chain   : Linear
    Number of Carbon Atoms : less than 7
    28:

```
Type of chain          : Linear
Number of Carbon Atoms : less than 7
```

chain nodes :
    10   11   15   16   26   27   28   30   31   32   33   35   36
ring nodes :
    1   2   3   4   5   6   7   8   9   12   13   14   17   18   19   20   21   22   23   24   25
    43   44   45
chain bonds :
    2-32   8-10   9-30   10-11   11-12   14-15   15-16   16-18   17-33   23-36   26-27
    26-28   30-31   33-35
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   12-13   12-43   13-14
    14-45   17-21   17-18   18-19   19-20   20-21   20-22   21-25   22-23   23-24   24-25
    43-44   44-45
exact/norm bonds :
    1-2   1-6   2-3   2-32   3-4   4-5   4-7   5-6   5-9   7-8   8-9   8-10   9-30   10-11
    11-12   12-13   12-43   13-14   14-15   14-45   15-16   16-18   17-21   17-18   17-33
    18-19   19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27   26-28
    30-31   33-35   43-44   44-45

G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   43:Atom   44:Atom   45:Atom
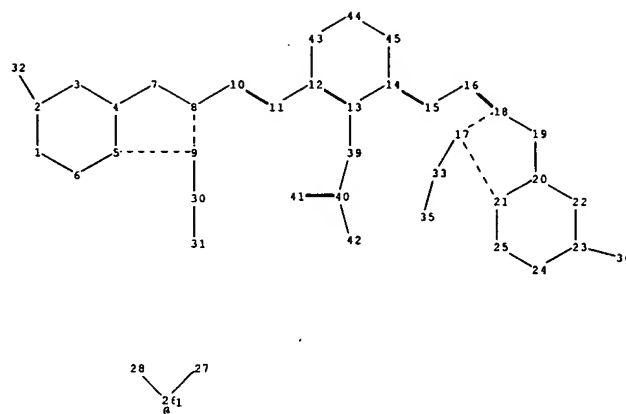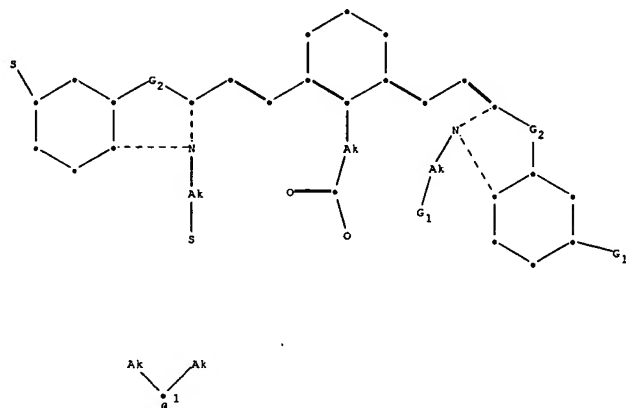Generic attributes :
    27:
    Type of chain   : Linear
    Number of Carbon Atoms : less than 7
    28:

```
Type of chain          : Linear
Number of Carbon Atoms : less than 7
```

```
chain nodes :
    10   11   15   16   26   27   28   30   31   32   33   35   36   39   40   41   42
ring nodes :
    1    2    3    4    5    6    7    8    9    12   13   14   17   18   19   20   21   22   23   24   25
    43   44   45
chain bonds :
    2-32   8-10   9-30   10-11   11-12   13-39   14-15   15-16   16-18   17-33   23-36
    26-27   26-28   30-31   33-35   39-40   40-41   40-42
ring bonds :
    1-2    1-6    2-3    3-4    4-5    4-7    5-6    5-9    7-8    8-9    12-13   12-43   13-14
    14-45   17-21   17-18   18-19   19-20   20-21   20-22   21-25   22-23   23-24   24-25
    43-44   44-45
exact/norm bonds :
    1-2    1-6    2-3    2-32   3-4    4-5    4-7    5-6    5-9    7-8    8-9    8-10   9-30   10-11
    11-12   12-13   12-43   13-14   13-39   14-15   14-45   15-16   16-18   17-21   17-18
    17-33   18-19   19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27
    26-28   30-31   33-35   39-40   40-41   40-42   43-44   44-45


G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   39:CLASS   40:CLASS   41:CLASS   42:CLASS
    43:Atom   44:CLASS   45:CLASS
Generic attributes :
    27:
    Type of chain          : Linear
    Number of Carbon Atoms : less than 7
```
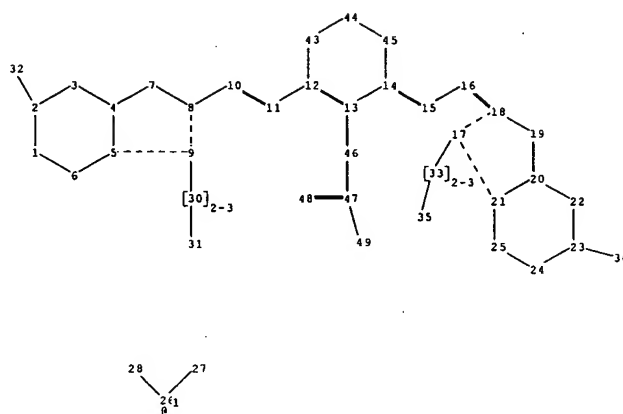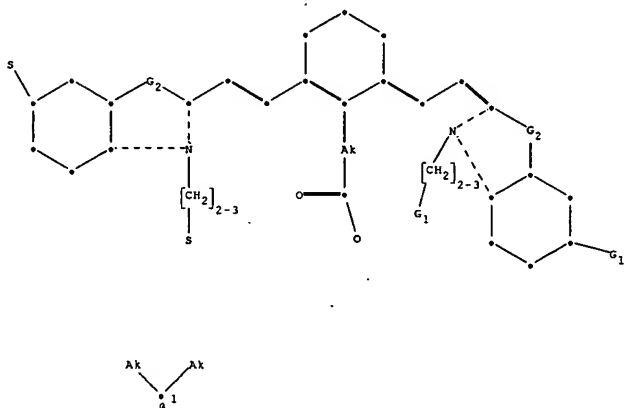
28:
Type of chain   : Linear
Number of Carbon Atoms : less than 7

```
chain nodes :
    10   11   15   16   26   27   28   30   31   32   33   35   36   46   47   48   49
ring nodes :
    1    2    3    4    5    6    7    8    9    12   13   14   17   18   19   20   21   22   23   24   25
    43   44   45
chain bonds :
    2-32   8-10   9-30   10-11   11-12   13-46   14-15   15-16   16-18   17-33   23-36
    26-27   26-28   30-31   33-35   46-47   47-48   47-49
ring bonds :
    1-2    1-6    2-3    3-4    4-5    4-7    5-6    5-9   7-8    8-9    12-13   12-43   13-14
    14-45   17-21   17-18   18-19   19-20   20-21   20-22   21-25   22-23   23-24   24-25
    43-44   44-45
exact/norm bonds :
    1-2    1-6    2-3    2-32   3-4    4-5    4-7    5-6    5-9    7-8   8-9    8-10   9-30   10-11
    11-12   12-13   12-43   13-14   13-46   14-15   14-45   15-16   16-18   17-21   17-18
    17-33   18-19   19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27
    26-28   30-31   33-35   43-44   44-45   46-47   47-48   47-49


G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom    2:Atom    3:Atom    4:Atom    5:Atom    6:Atom    7:Atom    8:Atom    9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   43:Atom   44:Atom   45:Atom   46:CLASS   47:CLASS
    48:CLASS   49:CLASS
Generic attributes :
    27:
    Type of chain            : Linear
    Number of Carbon Atoms : less than 7
```
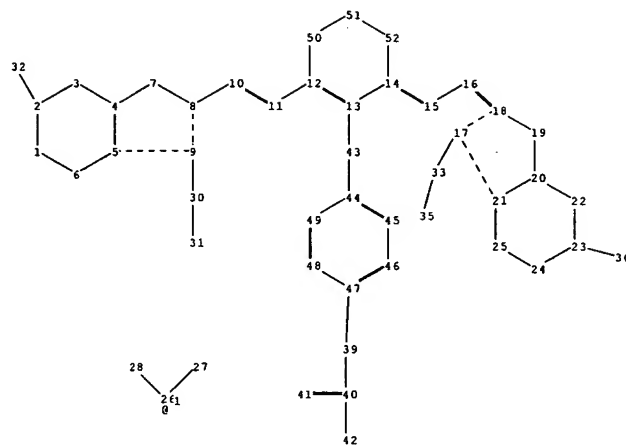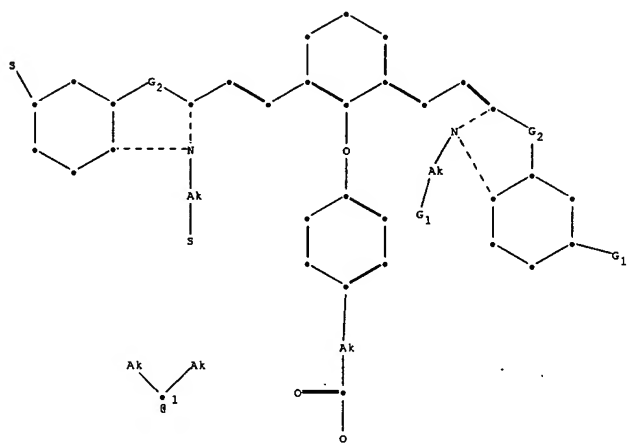
28:
Type of chain   : Linear
Number of Carbon Atoms : less than 7

chain nodes :
    10   11   15   16   26   27   28   30   31   32   33   35   36   39   40   41   42   43
ring nodes :
    1   2   3   4   5   6   7   8   9   12   13   14   17   18   19   20   21   22   23   24   25
    44   45   46   47   48   49   50   51   52
chain bonds :
    2-32   8-10   9-30   10-11   11-12   13-43   14-15   15-16   16-18   17-33   23-36
    26-27   26-28   30-31   33-35   39-40   39-47   40-41   40-42   43-44
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   12-13   12-50   13-14
    14-52   17-21   17-18   18-19   19-20   20-21   20-22   21-25   22-23   23-24   24-25
    44-45   44-49   45-46   46-47   47-48   48-49   50-51   51-52
exact/norm bonds :
    1-2   1-6   2-3   2-32   3-4   4-5   4-7   5-6   5-9   7-8   8-9   8-10   9-30   10-11
    11-12   12-13   12-50   13-14   13-43   14-15   14-52   15-16   16-18   17-33   17-21   17-18
    18-19   19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27
    26-28   30-31   33-35   39-40   39-47   40-41   40-42   43-44   50-51   51-52
normalized bonds :
    44-45   44-49   45-46   46-47   47-48   48-49

G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   39:CLASS   40:CLASS   41:CLASS   42:CLASS
    43:CLASS   44:Atom   45:Atom   46:Atom   47:Atom   48:Atom   49:Atom   50:Atom
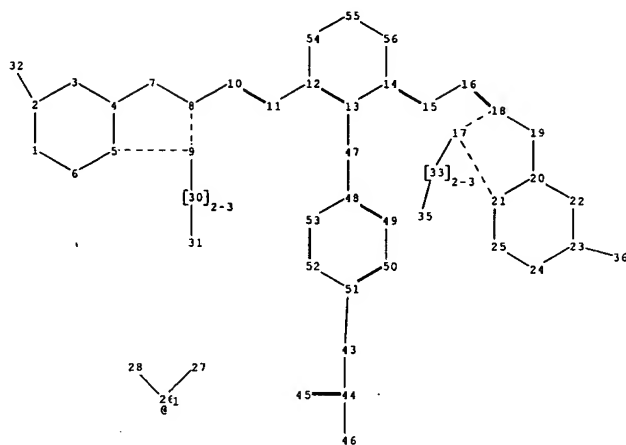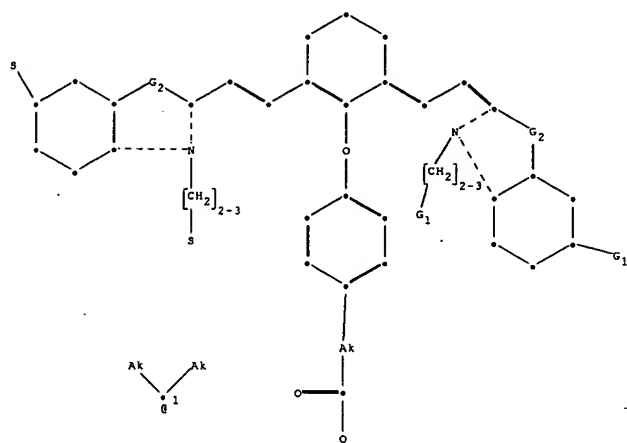   51:Atom   52:Atom
Generic attributes :

```
27:
Type of chain           : Linear
Number of Carbon Atoms  : less than 7
28:
Type of chain           : Linear
Number of Carbon Atoms  : less than 7
```

chain nodes :
    10   11   15   16   26   27   28   30   31   32   33   35   36   43   44   45   46   47
ring nodes :
    1   2   3   4   5   6   7   8   9   12   13   14   17   18   19   20   21   22   23   24   25
    48   49   50   51   52   53   54   55   56
chain bonds :
    2-32   8-10   9-30   10-11   11-12   13-47   14-15   15-16   16-18   17-33   23-36
    26-27   26-28   30-31   33-35   43-44   43-51   44-45   44-46   47-48
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   12-13   12-54   13-14
    14-56   17-21   17-18   18-19   19-20   20-21   20-22   21-25   22-23   23-24   24-25
    48-49   48-53   49-50   50-51   51-52   52-53   54-55   55-56
exact/norm bonds :
    1-2   1-6   2-3   2-32   3-4   4-5   4-7   5-6   5-9   7-8   8-9   8-10   9-30   10-11
    11-12   12-13   12-54   13-14   13-47   14-15   14-56   15-16   16-18   17-21   17-18
    17-33   18-19   19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27
    26-28   30-31   33-35   43-44   43-51   44-45   44-46   47-48   54-55   55-56
normalized bonds :
    48-49   48-53   49-50   50-51   51-52   52-53

G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   43:CLASS   44:CLASS   45:CLASS   46:CLASS
    47:CLASS   48:Atom   49:Atom   50:Atom   51:Atom   52:Atom   53:Atom   54:Atom
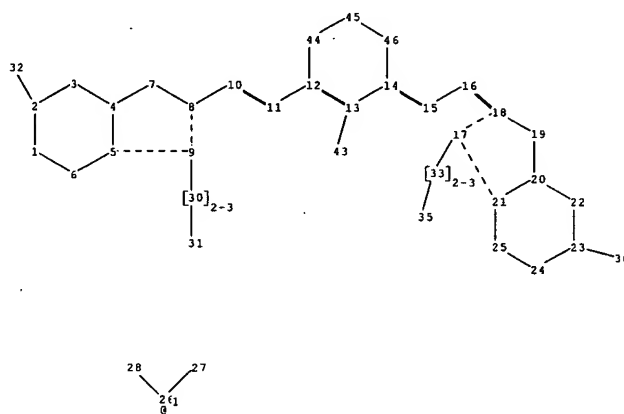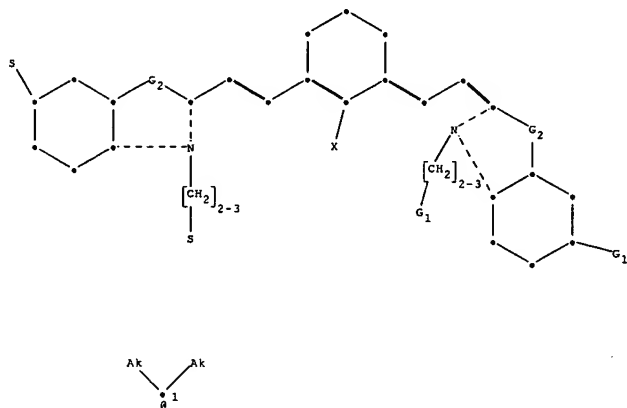   55:Atom   56:Atom
Generic attributes :

```
27:
Type of chain            : Linear
Number of Carbon Atoms : less than 7
28:
Type of chain            : Linear
Number of Carbon Atoms : less than 7
```

```
chain nodes :
    10   11   15   16   26   27   28   30   31   32   33   35   36   43
ring nodes :
    1    2    3    4    5    6    7    8    9    12   13   14   17   18   19   20   21   22   23   24   25
    44   45   46
chain bonds :
    2-32   8-10   9-30   10-11   11-12   13-43   14-15   15-16   16-18   17-33   23-36
    26-27   26-28   30-31   33-35
ring bonds :
    1-2    1-6    2-3    3-4    4-5    4-7    5-6    5-9    7-8    8-9    12-13   12-44   13-14
    14-46   17-21   17-18   18-19   19-20   20-21   20-22   21-25   22-23   23-24   24-25
    44-45   45-46
exact/norm bonds :
    1-2    1-6    2-3    2-32   3-4    4-5    4-7    5-6    5-9    7-8    8-9    8-10   9-30   10-11
    11-12   12-13   12-44   13-14   13-43   14-15   14-46   15-16   16-18   17-21   17-18
    17-33   18-19   19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27
    26-28   30-31   33-35   44-45   45-46
```

G1:H,S

G2:O,S,[*1]

```
Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   43:CLASS   44:Atom   45:Atom   46:Atom
Generic attributes :
    27:
    Type of chain          : Linear
    Number of Carbon Atoms : less than 7
    28:
```

```
Type of chain          : Linear
Number of Carbon Atoms : less than 7
```

```
=> d his ful

        (FILE 'HOME' ENTERED AT 10:00:59 ON 01 SEP 2005)

        FILE 'REGISTRY' ENTERED AT 10:02:08 ON 01 SEP 2005
L1              STRUCTURE UPLOADED
L2              STRUCTURE UPLOADED
L3              STRUCTURE UPLOADED
L4            · STRUCTURE UPLOADED
L5              STRUCTURE UPLOADED
L6              STRUCTURE UPLOADED
L7         11 SEA SSS SAM L3
L8        141 SEA SSS FUL L3
L9         77 SEA SUB=L8 SSS FUL L2
L10         6 SEA SUB=L9 SSS FUL L5
L11         0 SEA SUB=L8 SSS FUL L1
L12·        0 SEA SUB=L9 SSS FUL L6
L13             STRUCTURE UPLOADED
L14         0 SEA SUB=L8 SSS FUL L13
              D L10 1-6 IDE

        FILE 'HCAPLUS' ENTERED AT 10:18:33 ON 01 SEP 2005
L15         1 SEA PLU=ON  L10
              D L15
L16        35 SEA PLU=ON  L9
              D L16 30-35 IBIB HITSTR
              D L16 25-29 IBIB HITSTR

        FILE 'MARPAT' ENTERED AT 10:20:52 ON 01 SEP 2005
L17        92 SEA SSS FUL L3
L*** DEL    0 S L5 SAM
L18        11 SEA SSS FUL L5
L19         2 SEA SSS SAM L3
L20        92 SEA SSS FUL L3
              D L18 1-3 IBIB
              D L18 9-11 IBIB IDE
              D L18 1-8 IBIB IDE
              D L20 1-5 IBIB
              D L20 5-10 IBIB
              D L20 11-20 IBIB
L21         0 SEA PLU=ON  L20 AND (PD<20030129 OR PRD<20030129)
L22·        0 SEA PLU=ON  L20 AND PY<2004
              D L20 21-25 IBIB
              D L20 24 IBIB IDE
              D L20 26-30 IBIB IDE


        FILE HOME

        FILE REGISTRY
        Property values tagged with IC are from the ZIC/VINITI data file
        provided by InfoChem.

        STRUCTURE FILE UPDATES:   31 AUG 2005   HIGHEST RN 862246-83-1
        DICTIONARY FILE UPDATES:  31 AUG 2005   HIGHEST RN 862246-83-1

        New CAS Information Use Policies, enter HELP USAGETERMS for details.

        TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

           Please note that search-term pricing does apply when
           conducting SmartSELECT searches.
```

```
******************************************************************
*                                                                *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                                *
******************************************************************
```

Structure search iteration limits have been increased. See HELP SLIMITS
for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

FILE HCAPLUS

FILE COVERS 1907 - 1 Sep 2005 VOL 143 ISS 10
FILE LAST UPDATED: 31 Aug 2005 (20050831/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
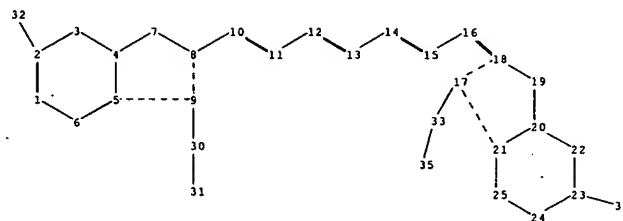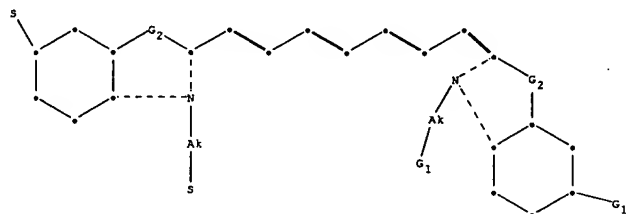 substance identification.

FILE MARPAT
FILE CONTENT: 1988-PRESENT (VOL 143 ISS 09)(20050826/ED)

MOST RECENT CITATIONS FOR PATENTS FROM FIVE MAJOR ISSUING AGENCIES
(COVERAGE TO THESE DATES IS NOT COMPLETE):

US   6903214 07 JUN 2005
DE   10350965 25 MAY 2005
EP   1538192 08 JUN 2005
JP 2005136379 26 MAY 2005
WO 2005060437 07 JUL 2005

Expanded G-group definition display now available.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

```
chain nodes :
    10   11   12   13   14   15   16   26   27   28   30   31   32   33   35   36
ring nodes :
    1    2    3    4    5    6    7    8    9    17   18   19   20   21   22   23   24   25
chain bonds :
    2-32   8-10   9-30   10-11   11-12   12-13   13-14   14-15   15-16   16-18   17-33
    23-36   26-27   26-28   30-31   33-35
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   17-21   17-18   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   24-25
exact/norm bonds :
    1-2    1-6    2-3    2-32   3-4    4-5    4-7    5-6    5-9    7-8    8-9    8-10   9-30   10-11
    11-12   12-13   13-14   14-15   15-16   16-18   17-21   17-18   17-33   18-19   19-20
    20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27   26-28   30-31   33-35
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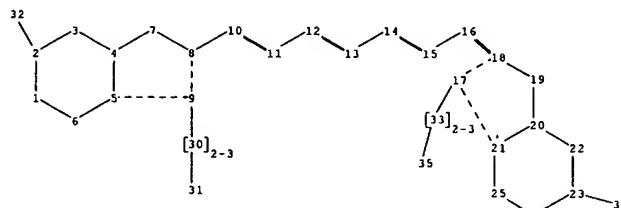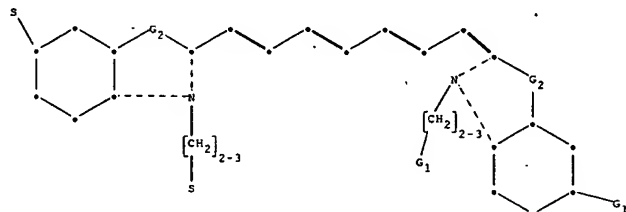
G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS
Generic attributes :
    27:
    Type of chain   : Linear
    Number of Carbon Atoms : less than 7
    28:
    Type of chain   : Linear
    Number of Carbon Atoms : less than 7

chain nodes :
    10   11   12   13   14   15   16   26   27   28   30   31   32   33   35   36
ring nodes :
    1   2   3   4   5   6   7   8   9   17   18   19   20   21   22   23   24   25
chain bonds :
    2-32   8-10   9-30   10-11   11-12   12-13   13-14   14-15   15-16   16-18   17-33
    23-36   26-27   26-28   30-31   33-35
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   17-21   17-18   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   24-25
exact/norm bonds :
    1-2   1-6   2-3   2-32   3-4   4-5   4-7   5-6   5-9   7-8   8-9   8-10   9-30   10-11
    11-12   12-13   13-14   14-15   15-16   16-18   17-21   17-18   17-33   18-19   19-20
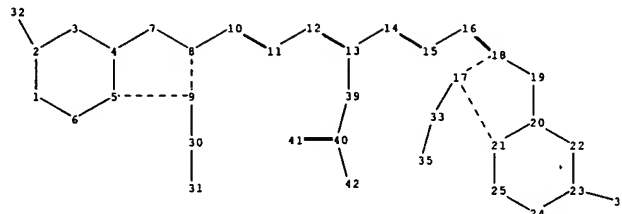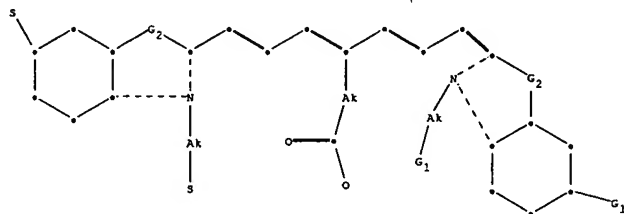   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27   26-28   30-31   33-35

G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS
Generic attributes :-
    27:
    Type of chain   : Linear
    Number of Carbon Atoms : less than 7
    28:
    Type of chain   : Linear
    Number of Carbon Atoms : less than 7

chain nodes :
    10   11   12   13   14   15   16   26   27   28   30   31   32   33   35   36   39   40   41
    42
ring nodes :
    1   2   3   4   5   6   7   8   9   17   18   19   20   21   22   23   24   25
chain bonds :
    2-32   8-10   9-30   10-11   11-12   12-13   13-14   13-39   14-15   15-16   16-18
    17-33   23-36   26-27   26-28   30-31   33-35   39-40   40-41   40-42
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   17-21   17-18   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   24-25
exact/norm bonds :
    1-2   1-6   2-3   2-32   3-4   4-5   4-7   5-6   5-9   7-8   8-9   8-10   9-30   10-11
    11-12   12-13   13-14   13-39   14-15   15-16   16-18   17-21   17-18   17-33   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27   26-28   30-31
    33-35   39-40   40-41   40-42

G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   39:CLASS   40:CLASS   41:CLASS   42:CLASS
Generic attributes :
    27:
    Type of chain   : Linear
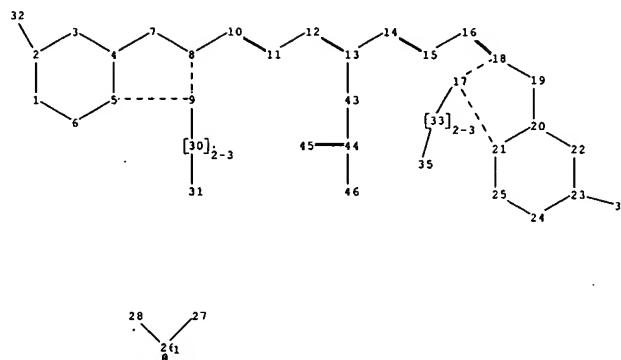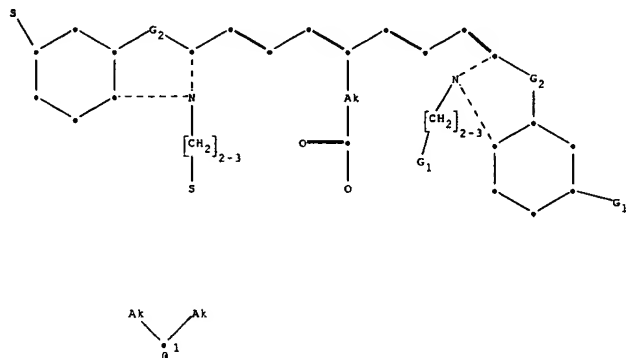   Number of Carbon Atoms : less than 7
    28:
    Type of chain   : Linear

Number of Carbon Atoms : less than 7

chain nodes :
    10   11   12   13   14   15   16   26   27   28   30   31   32   33   35   36   43   44   45
    46
ring nodes :
    1   2   3   4   5   6   7   8   9   17   18   19   20   21   22   23   24   25
chain bonds :
    2-32   8-10   9-30   10-11   11-12   12-13   13-14   13-43   14-15   15-16   16-18
    17-33   23-36   26-27   26-28   30-31   33-35   43-44   44-45   44-46
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   17-21   17-18   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   24-25
exact/norm bonds :
    1-2   1-6   2-3   2-32   3-4   4-5   4-7   5-6   5-9   7-8   8-9   8-10   9-30   10-11
    11-12   12-13   13-14   13-43   14-15   15-16   16-18   17-21   17-18   17-33   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27   26-28   30-31
    33-35   43-44   44-45   44-46

G1:H,S

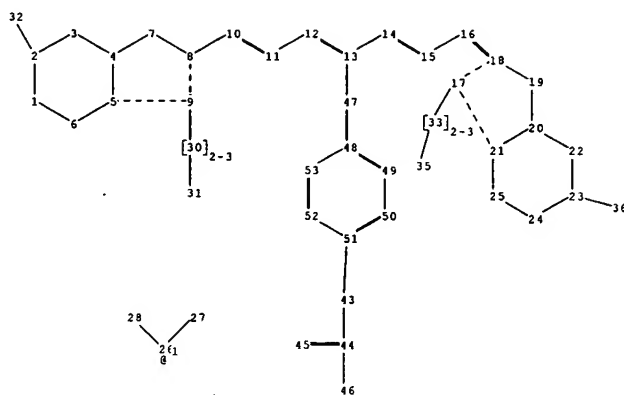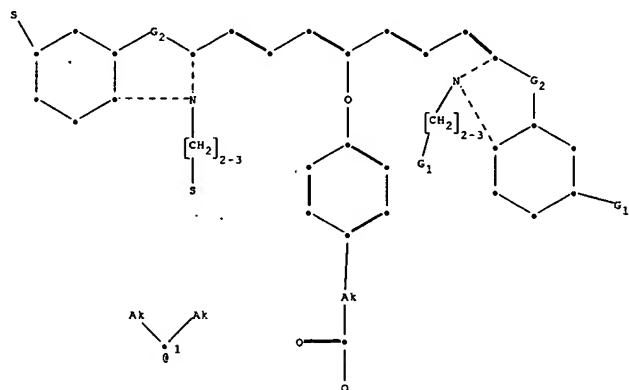G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   43:CLASS   44:CLASS   45:CLASS   46:CLASS
Generic attributes :
    27:
    Type of chain   : Linear
    Number of Carbon Atoms : less than 7
    28:
    Type of chain   : Linear

Number of Carbon Atoms : less than 7

chain nodes :
    10   11   12   13   14   15   16   26   27   28   30   31   32   33   35   36   43   44   45
    46   47
ring nodes :
    1   2   3   4   5   6   7   8   9   17   18   19   20   21   22   23   24   25   48   49   50
    51   52   53
chain bonds :
    2-32   8-10   9-30   10-11   11-12   12-13   13-14   13-47   14-15   15-16   16-18
    17-33   23-36   26-27   26-28   30-31   33-35   43-44   43-51   44-45   44-46   47-48
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   17-21   17-18   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   24-25   48-49   48-53   49-50   50-51
    51-52   52-53
exact/norm bonds :
    1-2   1-6   2-3   2-32   3-4   4-5   4-7   5-6   5-9   7-8   8-9   8-10   9-30   10-11
    11-12   12-13   13-14   13-47   14-15   15-16   16-18   17-21   17-18   17-33   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27   26-28   30-31
    33-35   43-44   43-51   44-45   44-46   47-48
normalized bonds :
    48-49   48-53   49-50   50-51   51-52   52-53

G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   43:CLASS   44:CLASS   45:CLASS   46:CLASS
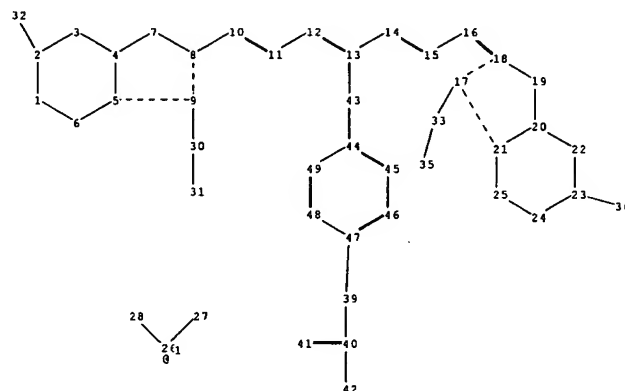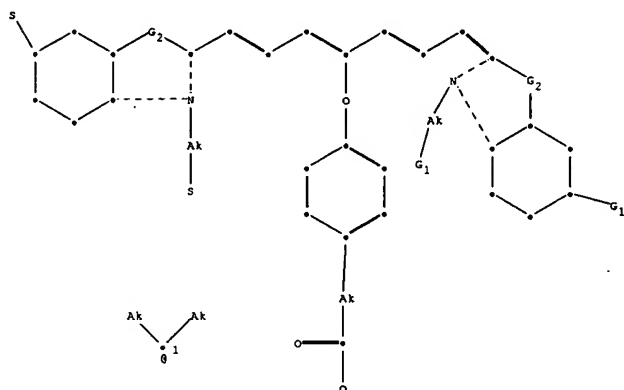   47:CLASS   48:Atom   49:Atom   50:Atom   51:Atom   52:Atom   53:Atom
Generic attributes :

```
27:
Type of chain          : Linear
Number of Carbon Atoms : less than 7
28:
Type of chain          : Linear
Number of Carbon Atoms : less than 7
```

chain nodes :
    10   11   12   13   14   15   16   26   27   28   30   31   32   33   35   36   39   40   41
    42   43
ring nodes :
    1   2   3   4   5   6   7   8   9   17   18   19   20   21   22   23   24   25   44   45   46
    47   48   49
chain bonds :
    2-32   8-10   9-30   10-11   11-12   12-13   13-14   13-43   14-15   15-16   16-18
    17-33   23-36   26-27   26-28   30-31   33-35   39-40   39-47   40-41   40-42   43-44
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   17-21   17-18   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   24-25   44-45   44-49   45-46   46-47
    47-48   48-49
exact/norm bonds :
    1-2   1-6   2-3   2-32   3-4   4-5   4-7   5-6   5-9   7-8   8-9   8-10   9-30   10-11
    11-12   12-13   13-14   13-43   14-15   15-16   16-18   17-21   17-18   17-33   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   23-36   24-25   26-27   26-28   30-31
    33-35   39-40   39-47   40-41   40-42   43-44
normalized bonds :
    44-45   44-49   45-46   46-47   47-48   48-49

G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   39:CLASS   40:CLASS   41:CLASS   42:CLASS
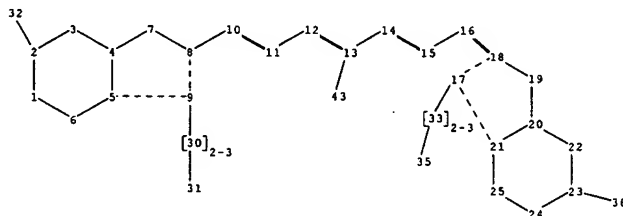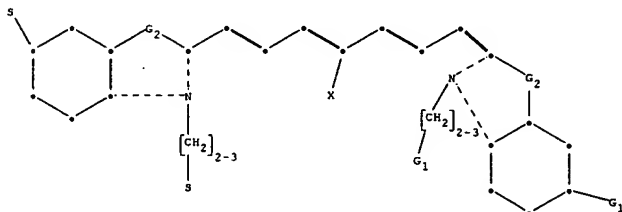   43:CLASS   44:Atom   45:Atom   46:Atom   47:Atom   48:Atom   49:Atom
Generic attributes :

```
27:
Type of chain          : Linear
Number of Carbon Atoms : less than 7
28:
Type of chain          : Linear
Number of Carbon Atoms : less than 7
```

```
chain nodes :
    10   11   12   13   14   15   16   26   27   28   30   31   32   33   35   36   43
ring nodes :
    1    2    3    4    5    6    7    8    9    17   18   19   20   21   22   23   24   25
chain bonds :
    2-32   8-10   9-30   10-11   11-12   12-13   13-14   13-43   14-15   15-16   16-18
    17-33  23-36  26-27  26-28   30-31   33-35
ring bonds :
    1-2   1-6   2-3   3-4   4-5   4-7   5-6   5-9   7-8   8-9   17-21   17-18   18-19
    19-20   20-21   20-22   21-25   22-23   23-24   24-25
exact/norm bonds :
    1-2    1-6    2-3    2-32   3-4    4-5    4-7    5-6    5-9    7-8    8-9    8-10   9-30   10-11
    11-12  12-13  13-14  13-43  14-15  15-16  16-18  17-21  17-18  17-33  18-19
    19-20  20-21  20-22  21-25  22-23  23-24  23-36  24-25  26-27  26-28  30-31
    33-35


G1:H,S

G2:O,S,[*1]

Match level :
    1:Atom   2:Atom   3:Atom   4:Atom   5:Atom   6:Atom   7:Atom   8:Atom   9:Atom
    10:CLASS   11:CLASS   12:CLASS   13:CLASS   14:CLASS   15:CLASS   16:CLASS
    17:Atom   18:Atom   19:Atom   20:Atom   21:Atom   22:Atom   23:Atom   24:Atom
    25:Atom   26:CLASS   27:CLASS   28:CLASS   30:CLASS   31:CLASS   32:CLASS
    33:CLASS   35:CLASS   36:CLASS   43:CLASS
Generic attributes :
    27:
    Type of chain          : Linear
    Number of Carbon Atoms : less than 7
    28:
    Type of chain          : Linear
    Number of Carbon Atoms : less than 7
```